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ABSTRACT

One area of research that has important implications for improving the education of students at risk of academic failure is concerned with resilient students, or those students who succeed in school despite the presence of adverse conditions. In education, conceptual and empirical work on resilience has gained recognition as a framework for examining why some students are successful in school, while others from the same socially and economically disadvantaged backgrounds and communities are not. Such a framework could be useful in helping educators design more effective educational interventions that take into account alterable factors that distinguish resilient students from nonresilient students. The purpose of this report is to explain how a focus on educational resilience might lead to improvements in the education of students at risk of academic failure. Issues related to the definition of resilience are discussed, and several resilience studies that have helped to develop the field are reviewed. Recent studies in the area of educational resilience are examined, specifically those that focus on the differences between resilient and nonresilient students, their family environment, and their perceptions of the classroom and school environment. The final section of the report discusses implications for educational practice and research. (Contains 61 references.) (SLD)

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CENTER FOR RESEARCH ON EDUCATION, DIVERSITY & EXCELLENCE (CREDE)

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Abstract

One area of research that has important implications for improving the education of students at risk of academic failure is concerned with "resilient" students, or those students who succeed in school despite the presence of adverse conditions. In education, conceptual and empirical work on resilience has gained recognition as a framework for examining why some students are successful in school, while others from the same socially- and economically-disadvantaged backgrounds and communities are not. Such a framework could be useful in helping educators design more effective educational interventions that take into account "alterable" factors that distinguish resilient students from nonresilient students. The purpose of this report is to explain how a focus on educational resiliency might lead to improvements in the education of students at risk of academic failure. Issues related to the definition of resiliency are discussed, and several resilience studies that have helped to develop the field are reviewed. Recent studies in the area of educational resiliency are examined, specifically those that focus on the differences between resilient and nonresilient students, their family environment, and their perceptions of the classroom and school environment. The final sections of the report discuss implications for educational practice and research.

Review of Research on Educational Resilience

Students at risk of academic failure often face a complexity of problems caused by poverty, health, and other social conditions that have made it difficult for them to succeed in school. Consequently, one of the most compelling priorities on the national educational agenda is to close the achievement gap between those students who are academically successful and those who are at risk of failure. One area of research that has important implications for the educational improvement of students at risk of academic failure is focused on "resilient" students, or those students who succeed in school despite the presence of adverse conditions. During the last several decades, research on resilience has been widely conducted in the areas of developmental psychopathology, psychology, sociology, and anthropology. Conceptual and empirical work on resilience has recently gained similar recognition as a framework for examining why some students are successful in school, while other students from the same socially- and economically-disadvantaged backgrounds and communities are not.

The construct of "educational resilience" is not viewed as a fixed attribute but as something that can can be promoted by focusing on "alterable" factors that can impact an individual's success in school. This approach does not focus on attributes such as ability, because ability has not necessarily been found to be a characteristic of resilient students (Benard, 1993; Gordon & Song, 1994; Masten, Best, & Garmezy, 1990). There are, however, several alterable factors that have been found to influence resiliency in children. Benard (1993), for example, found that there are four personal characteristics that resilient children typically display:

- social competence,
- problem-solving skills,
- autonomy, and
- a sense of purpose.

McMillan and Reed (1994) describe four other factors that appear to be related to resiliency:

- personal attributes such as motivation and goal orientation,
- positive use of time (e.g., on-task behavior, homework completion, participation in extracurricular experiences),
- family life (e.g., family support and expectations), and
- school and classroom learning environment (i.e., facilities, exposure to technology, leadership, and overall climate).

Students may be exposed to inappropriate educational experiences through their families, schools, or communities (Pallas, Natriello, & McDill, 1989). While educators cannot control community demographics and family conditions, they can change educational policies and practices to ensure that they address the specific needs of students at risk of academic failure (Comer, 1987). Policy makers, administrators, teachers, and parents need to understand why some students are resilient and do well in school, while others from the same socioeconomic backgrounds and schools and similar home environments do not do well academically.

The purpose of this report is to explain how a focus on educational resiliency might lead to improvements in the education of students at risk of academic failure. Such a framework could help educators design more effective educational interventions that take into account "alterable" factors that promote resiliency. Issues related to the definition of resiliency are discussed, and several resilience studies that have helped develop the field are reviewed. Recent studies in the area of educational resiliency are examined, specifically those that focus on differences between resilient and

nonresilient students' characteristics, family background, and perceptions of the classroom and school environment. The final sections of the report discuss implications for educational practice and research.

Issues in Defining Resiliency

Although most definitions of resiliency are similar, some delineation among definitions should be considered. Synonymous terms have been used interchangeably in describing resilient individuals. Hardy, invulnerable, and invincible, for example, are all terms that have been used to describe resilient individuals (Wolin & Wolin, 1993). The difference among definitions of resilience is often rooted in the specific approach or context in which resilience is being studied. "High-risk" groups, for example, are typically defined by a label (e.g., poverty, family background, or abuse), while definitions that focus on the broader educational community are often based on the positive experiences that may be associated with individual adaptation (e.g., significant relationships, school perceptions, and school involvement). It is important to consider these different approaches when studying the resiliency construct. It is also important to recognize the specific context in which resilience is being examined before generalizing the resilience concept to larger educational resilience domains. All of these approaches are vital to the understanding of resilience. The resiliency concept needs to be better understood contextually before practical implications can be drawn about building resiliency in our schools (Liddle, 1994).

Wolin and Wolin (1993) explained that the term "resilient" was adopted in lieu of earlier terms used to describe the phenomenon (such as invulnerable, invincible, and hardy), because of its recognition of the struggle involved in the process of becoming resilient. The term resiliency generally refers to those factors and processes that limit negative behaviors associated with stress and result in adaptive outcomes even in the presence of adversity. Garmezy and Masten (1991), for example, defined resilience as "a process of, or capacity for, or the outcome of successful adaptation despite challenging and threatening circumstances" (p. 459).

One of the most widely used definitions of educational resilience is "the heightened likelihood of success in school and other life accomplishments despite environmental adversities brought about by early traits, conditions, and experiences" (Wang, Haertel, & Walberg, 1994, p. 46). While success is an educational variable that researchers often investigate and measure (e.g., cognitive, affective, and behavioral outcomes), adversity is a phenomenon that educators often do not operationally define and study. Attending an at-risk school environment, for example, could be considered an adverse condition (Waxman, 1992), but there are other risk factors (e.g., poverty, drug abuse, sexual activity, coming from a single-parent home, having a sibling who has dropped out of school, or being home alone after school 3 or more hours a day) that may be equally as important to measure. This issue raises such questions as whether or not a successful student who has only one or two of these risk factors can be considered a resilient student. Clearly an educationally-resilient student who has one or two risk factors is very different from a student who is extremely vulnerable to multiple high-risk behaviors (e.g., substance abuse, attempted suicide). Thus, the number of at-risk factors and the magnitude of these are two important issues that should be addressed. Similarly, issues should be addressed regarding the measurement of resiliency. For example, should scoring in the top quartile on standardized tests, scoring in the ninety-fifth percentile on standardized tests for a 3-year period, receiving a National Merit Scholarship, or graduating with honors from a prestigious school be weighted similarly or differently in a determination of resilience?

A similar issue regarding the measurement of resiliency applies to different identification procedures for distinguishing resilient students from nonresilient ones. Many resiliency studies have used academic achievement (e.g., grades and standardized achievement tests) as the criterion for identifying resilient students. This approach has often been criticized because of the potential limitations of measuring academic achievement, such as validity or reliability concerns. These studies often identify resilient students based on one achievement test, which may not in fact represent students' overall academic achievement. Other resiliency studies have used teacher nomination as the criterion for determining resilient students. Not surprisingly, the dramatic differences found in most of these studies between resilient and nonresilient students may be consistent with teachers' expectations and attitudes toward the students. Thus, the use of teacher nomination to identify resilient students could be considered a limitation of the current research in the field, because there is the danger that having teachers identify or classify students as nonresilient could ultimately impact their success (Storer, Cychosz, & Licklider, 1995). At the same time, the teacher nomination approach may be one of the most valid identification procedures, because teachers' decisions are typically based on a variety of indicators that are exhibited throughout the school year.

The following sections describe some of the classic resilience studies and discuss current research in educational resiliency.

Classic Resilience Studies

The concept of resilience has been used to describe three major categories of phenomena in the psychological literature (Masten, Best, & Garmezy, 1990). The first category includes studies of individual differences in recovery from trauma. The second category is made up of people from high-risk groups who obtain better outcomes than would typically be expected of these individuals. The third major category of the resilience literature refers to the ability to adapt, despite stressful experiences. The following studies have been identified as the pioneering work in identifying the resilience concept and represent all three categories of the resilience phenomena.

Rutter (1979) conducted an epidemiological study that reflects the first category of resilience. Over a 10-year period, he studied children on the Isle of Wight and in inner-city London whose parents had been diagnosed with a mental illness. Through intensive interviews, he found that these children had escaped relatively unharmed. They did not become mentally ill themselves, nor did they exhibit maladaptive behavior. Rutter began to question why so many of these children showed no signs of the adverse conditions that they had to deal with on a regular basis. He found that both individual characteristics and the children's school environment were important protective factors. Rutter suggested that genetic factors do play a significant role in determining individual differences in personality characteristics and intelligence. He also found that the school environment contains important protective factors, such as fostering a sense of achievement in children, enhancing their personal growth, and increasing their social contacts.

Werner and Smith (1977) conducted an important study that reflects the second category of the resilience phenomena. The focus of this longitudinal study was on a high-risk group of children born in 1955 on Kauai, Hawai'i. One third of this cohort (n = 201) was designated as high-risk, because they were born into poverty and lived in a family environment troubled by a number of factors including biological and prenatal stress, family instability and discord, parental psychopathology, or other poor

child-rearing conditions. One third of these high-risk children (n = 72) grew up to be competent, confident, and caring adults. Several differences were found when these children were contrasted with the at-risk children who did develop serious problems. These results were separated into three types of protective attributes that supported resilience:

- dispositional attributes of the individual,
- affectional ties with the family, and
- external support systems in the environment.

In early childhood, resilient children at high-risk experienced fewer illnesses and were perceived as active, affectionate, and socially responsive by their parents. Resilient children displayed additional traits, such as self-help skills, sensorimotor acquisition, and language development. In early adolescence, resilient children displayed good problem-solving skills, communication skills, and perceptual motor development. In their late teens, resilient individuals possessed high internal locus of control, an achievement-oriented attitude, and positive self-esteem. In adulthood, resilient individuals were able to relate to numerous sources of support within their environment (Werner & Smith, 1977).

In a follow-up study, Werner and Smith (1992) provided evidence that the resiliency process may be different for men and women. When their sample was 31 and 32 years of age, scholastic competence at age 10 was more strongly associated with successful transition into adult responsibilities for men than for women. Factors such as high self-esteem, efficacy, and sense of personal control at age 18, however, were more predictive of successful adult adaptation among women than men. Differences were also found with regard to loss of caregivers and the development of mental health problems. Within the first 10 years of life, the men were more vulnerable to separation from the loss of caregivers; in the second decade, the adolescent women were found to be more vulnerable to chronic family discord and disturbed interpersonal relationships than men.

The Project Competence study (Garmezy, Masten, & Tellegen, 1984) illustrates the third category of the resilience phenomena. Garmezy and his colleagues began Project Competence to better understand how resiliency influenced children when they experienced stressful situations. The focus of the project was what impact life "stressors" had on the competency levels of the elementary school students studied. For more than 10 years, approximately 200 children and their families—from a sample of 612 third to six grade students—participated in this study. The participants were found to be suffering from multiple stressful life conditions. Teacher ratings, peer assessments, and school record data assessed competence, and stress exposure was measured by a life event questionnaire. Researchers intensively interviewed parents for 6 hours about the social structure of their family and their perspective of their child. In an exploratory multiple regression correlation analysis, researchers found that disadvantaged children with lower IQs and socioeconomic status (SES) and less positive family qualities were generally less competent and more likely to be disruptive. Garmezy and his colleagues, however, found that some of the disadvantaged children were competent and did not display behavioral problems. Because of this finding, they began to question why some children did not succumb to the adversity they faced and develop negative adaptations.

Results from these classic resiliency studies provide compelling evidence that many factors may help students at risk of failure become resilient despite adversity. These results also provide evidence that resilient individuals interpret stressful life experiences and trauma differently. A central theme connecting all of the results mentioned above is the emphasis on both individual characteristics and environmental factors as possible sources of resilience.

Research on Educational Resilience

While it has been argued that the skills, opportunities, and relationships that promote resiliency can be provided in schools (Storer, Cychosz, & Licklider, 1995), only a few studies have actually examined resiliency in schools. Most of the research in this area has focused on comparing resilient and nonresilient students on important family and individual background characteristics, and on key classroom processes that have been proposed to foster resiliency. Some researchers have found that there are dramatic differences between resilient and nonresilient students on a variety of background characteristics, personal attributes (e.g., motivation and future aspirations), and classroom processes (e.g., perceived learning environment and observed classroom behavior). This section highlights some of the recent educational resiliency research.

In a study designed to understand successful high school students, Reyes and Jason (1993) examined factors that distinguished the success and failure of Latino students from an inner-city high school. Based on their ninth-grade attendance rate and academic achievement, 24 tenth-grade students were identified as being at high risk for dropping out of school, while 24 others were deemed to be at low risk of dropping out of school. Participants were interviewed individually on a number of topics covering four main areas: family background, family support, overall school satisfaction, and gang pressures. Researchers found that there were no differences between the two groups with regard to socioeconomic status, parent-student involvement, or parental supervision. Low-risk students, however, reported significantly more satisfaction with their school than high-risk students. On the other hand, high-risk students were more likely to respond that they had been invited to join a gang or had brought a weapon to school.

In another study that used academic grades as criteria for resiliency, Gonzalez and Padilla (1997) examined factors that contributed to the academic resilience and achievement of 133 resilient and 81 nonresilient Mexican American high school students. From a population of over 2,000 Mexican American students from three high schools in California, they identified "resilient students" as students who reported that their grades so far in high school were "Mostly A's." They identified "nonresilient students" as those who reported that their grades in high school were "Mostly D's" or "Mostly below D's." They found that resilient students had significantly higher perceptions of family/peer support, teacher feedback, positive ties to school, value placed on school, peer belonging, and familism than nonresilient students did. Researchers also found that students' sense of belonging to school was the only significant predictor of academic resilience.

Alva (1991) used the term "academic invulnerability" to describe students who "sustain high levels of achievement, motivation and performance, despite the presence of stressful events and conditions that place them at risk of doing poorly in school and ultimately dropping out of school" (p. 19). In her study, she examined the characteristics of a cohort of tenth-grade Mexican American students, finding that resilient or invulnerable students (i.e., students who maintained a high grade point average in the tenth grade and were from a low socioeconomic background) reported higher levels of educational support from their teachers and friends and were more likely to "feel encouraged and prepared to attend college, enjoy coming to school and being involved in high school activities, experience fewer conflicts and difficulties in their intergroup relations with other students, and experience fewer family conflicts and difficulties" (p. 31).

The Center for Research on the Education of Students Placed at Risk (CRESPAR) has been involved in several studies on educational resiliency. In a special issue on resilient students in *Education and Urban Society*, Lee, Winfield, and Wilson (1991) used 1983-84 reading assessment scores from the National Assessment of Educational Progress (NAEP) data to compare 661 high-achieving, eighth-grade, African American students to 1,894 low-achieving, eighth-grade, African American students. High-achieving students were those who scored above the overall population mean on reading performance, while low-achieving students were those who scored below the population mean. In terms of family or background characteristics, they found that high-achieving students were from a higher social class, were younger, and had a higher proportion of working mothers than low-achieving students. In terms of school differences, they found that high-achieving students were also more likely to attend schools that were of higher socioeconomic status, were Catholic, had more curriculum exposure, higher student commitment, and a lower proportion of students in remedial reading than schools attended by low-achieving students. In terms of student academic behaviors, high-achieving African American students reported reading more pages per week, doing more homework, and having higher grades than low-achieving students.

Nettles, Mucherach, and Jones (2000) reviewed several more recent CRESPAR studies that examined the influence of social resources such as parent, teacher, and school support on students' resilience. They found that access to social resources, such as caring parents, participation in extracurricular activities, and supportive teachers were beneficial to students' academic achievement. In their own research with 75 fourth- and fifth-grade students, they found that students' perceived exposure to violence had a significant negative impact on their mathematics and reading achievement, while teacher support had a positive impact on mathematics achievement. Students' perceptions of stressful life events, however, did not have a significant effect on achievement.

In a series of studies conducted by the U.S. Department of Education National Research Centers; the Center for Education in the Inner Cities (CEIC); and the Center for Research on Education, Diversity & Excellence (CREDE), Waxman, Padron, and colleagues conducted several studies that examined differences between resilient and nonresilient elementary and middle school students from several urban school districts serving culturally and linguistically diverse students from low socioeconomic circumstances. In an initial study, Waxman and Huang (1996) compared the motivation and classroom learning environment of 75 resilient versus 75 nonresilient sixth-, seventh-, and eighth-grade students from an inner-city middle school located in a major urban city in the south central region of the United States. Educationally resilient students were defined as students who scored at or above the ninetieth percentile on standardized achievement mathematics tests over a 2-year period. Non-resilient students were defined as students who scored at the tenth percentile or lower on standardized achievement tests for a 2-year period. Resilient students were found to have significantly higher perceptions of involvement, task orientation, rule clarity, satisfaction, pacing, and feedback than nonresilient students. Resilient students also reported a significantly higher social self-concept, achievement motivation, and academic self-concept than nonresilient students. On the other hand, there were no significant differences between the two groups on variables such as parent involvement, homework, and teacher support. One explanation for why no differences were found on the teacher support variable was that both resilient and nonresilient students had low perceptions of their teachers' support; there was also a significant variability of responses within the groups. On the other hand, one explanation for not finding significant differences between resilient and nonresilient students on their perceptions of parent involvement was that both groups' responses were very high and there was little variability within the groups.

Waxman, Huang, and Padrón (1997) compared the motivation and learning environment of resilient and nonresilient Latino middle school students from a multiethnic, metropolitan city located in the south central region of the United States. From the entire population of Latino students in the district, a stratified sample of 60 resilient and 60 non-resilient Latino students were randomly selected to be included in the study. Students identified as "gifted or talented" or "special education" were not included in the sample. Students were classified as "resilient" if they scored on or above the seventy-fifth percentile on the district-administered, standardized Four-Step Problem Solving Test over a 2-year period and reported receiving "A's" or "B's" in mathematics over a 2-year period. Students were classified as "non-resilient" if they scored on or below the twenty-fifth percentile on the Four-Step Problem Solving Test for a 2-year period, reported receiving "C's," "D's," or "F's" for mathematics one year, and "B's," "C's," "D's," or "F's" in mathematics the previous year. A stratified sampling technique was used to obtain an equal number of students by sex and grade within each student group (i.e., resilient or non-resilient).

The results indicated that there were no significant differences between the two groups on whether they spoke a non-English language before they started school. About 76% of the resilient students indicated that they spoke a language other than English before they started school, while about 67% of the non-resilient students responded that they also spoke a language other than English before starting school. There were, however, statistically significant differences between the two groups on the extent to which students were held back a grade in school. About 53% of the non-resilient students indicated that they were held back a grade in school compared to only 13% of the resilient students.

There were significant differences between the two student groups on their academic aspirations. About 78% of the resilient students indicated that they would graduate from high school, compared to only 43% of the non-resilient students. Similarly, over 90% of the resilient students indicated that they would graduate college or attend graduate school, compared to only about 46% of the non-resilient students.

There were statistically significant differences between the two groups on two of the time allocation items. Resilient students reported that they spent significantly more time doing mathematics homework each week than non-resilient students. Resilient students also indicated that they spent more time on additional reading than non-resilient students did. There were no significant differences between the two groups on the amount of time they spent watching television on weekends or during the weekdays, and on the amount of time they spent listening to CDs, tapes, or the radio. There were also significant differences between the two groups on attendance records. Resilient students were less likely to report cutting or missing classes and being late for school than non-resilient students were.

The multivariate analysis and univariate post hoc tests revealed that resilient students had significantly higher perceptions of Involvement, Satisfaction, Academic Self-Concept, and Achievement Motivation than nonresilient students. The discriminant function analysis revealed that the variables of Academic Aspirations, Involvement, Academic Self-Concept, Expectations for High School Graduation, Not Being Held Back in School, and Satisfaction were related most highly to the overall discriminant function.

In another study, Waxman, Huang, and Wang (1997) focused on resilient and nonresilient students from four elementary schools from a large urban school district located in a major metropolitan city in the south central region of the United States. Two fourth- and two fifth-grade classrooms were randomly selected from each of

these four inner-city schools. Near the middle of the school year, teachers were asked to identify their population of students at risk (e.g., students from families of low socioeconomic status, living with a single parent, relative, or guardian). From this pool of at-risk students, teachers were told to select up to three "resilient" (i.e., high achieving on both standardized achievement tests and daily school work, very motivated, and excellent attendance) and three "non-resilient" students (i.e., low achieving on both standardized achievement tests and daily school work, not motivated, and poor attendance) in their class. Resilient and non-resilient students completed learning environment and motivation surveys and were observed using a shadowing observation technique. The shadowing observations consisted of narrative descriptions of the following:

- the physical environment of the classroom,
- teachers' instructional approaches, behaviors, and attitudes toward students, and
- students' observed attitudes, actions, mannerisms, and interactions.

The shadowing observations were recorded on lap-top computers that were programmed to provide observers with specific time prompts that told them exactly when they were to record the information (i.e., narrative comments) about each student. A sample of "average" students from each classroom was also included in the study.

Overall, resilient students perceived their classrooms much more favorably than nonresilient students. Resilient students had a higher academic self-concept and aspirations than nonresilient students did. They also perceived their teachers as having higher expectations for them and providing them with more feedback and appropriate pacing than nonresilient students. Furthermore, resilient students reported that they were more involved and satisfied in their classrooms than nonresilient students were. They also perceived more task orientation and order and organization than nonresilient students did. For the most part, average students' perceptions were generally similar to resilient students.

There were several prevalent themes that emerged from the shadowing and case study data. First, several important factors distinguished resilient from nonresilient students. Resilient students appeared to be persistent and attentive, demonstrated leadership skills, worked well with other students, frequently volunteered answers, and were often engaged in their school work. Resilient students were generally more enthusiastic, energetic, and better behaved than nonresilient students. Resilient students received more teacher attention and praise than nonresilient students. On the other hand, nonresilient students often appeared to be shy, frequently tired, not attentive to the teacher, or bored. They were not as engaged in class activities as were resilient students, and they appeared to get started on their work more slowly. Many nonresilient students appeared anxious, restless, easily distracted, and sometimes resistant to doing their work. A few of the nonresilient students were disruptive in the classroom, either disturbing other classmates by talking to them or making a loud enough commotion at their desks that the teacher needed to reprimand them. It is important to note that there was much more variation in the behaviors of nonresilient students than resilient students.

While the primary focus of the shadowing data was on resilient and non-resilient students, the instructional contexts that were prevalent in these classrooms were also observed. Findings revealed that, overall, instruction in these inner-city elementary schools was whole-class instruction with students working in teacher-assigned activities, generally in a passive manner (i.e., watching or listening). There was very little small group work observed in any of the classrooms, and when it did occur, it would typically be one student working with another student. Teachers were observed

keeping students on task most of the time, focusing on the task, communicating the task procedures, and checking students' work. They also spent more time explaining than questioning, cueing, or prompting students. Teachers were not frequently observed encouraging extended student responses or encouraging students to help themselves or each other. Generally, there was little engagement in the classroom and the intellectual level of the curriculum was low, with very few authentic activities. Very little of the content was related to students' interests or the world outside school. The predominant culture of the classrooms observed was related to "getting work done," rather than emphasizing authentic learning situations.

Another important finding from this study was that in the few classrooms where significant student-teacher interaction did occur, it was much more difficult to ascertain differences between resilient and nonresilient students. The direct instructional approach that predominated in both reading and mathematics classrooms appeared to be much more suited to resilient students, who were motivated and attentive, volunteered answers, and received more teacher attention and praise than nonresilient students, who appeared bored, reluctant to answer questions, and at times reluctant to work. Overall, the qualitative findings indicated that resilient students were much more successful in classrooms that employed direct instruction than nonresilient students were. Although there were great observable differences in the academic behaviors of these two groups of students, no remediation, adaptive, or enrichment activities were observed in any classrooms. For the most part, teachers did not treat individual students differently; they focused on the whole class and directed instructional activities toward everyone at the same time.

Padrón, Waxman, and Huang (1999) compared the classroom instruction and learning environment of about 250 resilient, average, and nonresilient students in fourth- and fifth-grade classrooms from three elementary schools located in a major metropolitan area in the south central region of the United States. Students in the three schools were predominately Hispanic, and most of them received free or reduced lunches. Near the middle of the school year, teachers were asked to identify their population of students at risk (e.g., students from families of low socioeconomic status, living with a single parent, relative, or guardian). From this pool of at-risk students, teachers were told to select up to three "resilient" (i.e., high achieving on both standardized achievement tests and daily school work, very motivated, and excellent attendance) and three "non-resilient" students (i.e., low achieving on both standardized achievement tests and daily school work, not motivated, and poor attendance) in their class. Near the end of the school year, all the fourth- and fifth-grade students completed the My Class learning environment survey, and trained observers systematically observed the resilient and non-resilient students identified by teachers during regular reading or language arts classes.

They found that resilient fourth- and fifth-grade students perceived a more positive learning environment and were more satisfied with their reading and language arts classrooms than nonresilient students. In addition, nonresilient students indicated that they had more difficulty with their classwork than both average students and resilient students. The observational results revealed that resilient students spent significantly more time interacting with teachers for instructional purposes, whereas nonresilient students spent more time interacting with other students for social or personal purposes. Resilient students were also observed watching or listening significantly more often than nonresilient students, whereas nonresilient students were observed more often not attending to task. The percentage of time that resilient students were on task was much higher than that of nonresilient students. Resilient students were also less often distracted or disruptive than nonresilient students.

Read (1999) interviewed several fourth- and fifth-grade teachers about the concept of resilient and nonresilient students. Teachers reported that they had no difficulty identifying resilient and nonresilient students in their classrooms. Several teachers shared specific examples of why certain students in their class were clearly resilient or nonresilient. The teachers also indicated that the resilience framework was a useful approach for helping them to understand why certain students might be successful or unsuccessful in school. In addition, the study revealed several behavior patterns that teachers thought distinguished resilient students from nonresilient ones. Most teachers, for example, indicated that lack of parental involvement, low student motivation, and low self-esteem were the major factors contributing to the lack of success of nonresilient students; teachers similarly reported that the same factors (parental involvement, student motivation, self-esteem) contributed to the success of resilient students. The teachers, however, did not mention any school, program, or classroom factor (e.g., teaching practices) that contributed to the academic success or failure of nonresilient students. They did report that many instructional strategies were effective for resilient students. They could, however, mention only a few instructional strategies that they thought were effective for nonresilient students.

The studies described above illustrate the growing body of research on educational resilience. Most of the research, however, has been descriptive, comparative, or correlational. There have been few experimental studies in this area. One exception is a recent project by the Center for Research on Education, Diversity, & Excellence, (CREDE) in which Padrón, Waxman, Powers, and Brown (2002) developed, implemented, and tested a teacher development program designed to improve the resiliency of low achieving English Language Learners (ELLs). The Pedagogy for Improving Resiliency Program (PIRP) was implemented in six fourth- and fifth-grade classrooms in an urban elementary school serving predominantly Hispanic ELLs from low socioeconomic backgrounds. The yearlong PIRP consisted of training that incorporated several components designed to help classroom teachers improve their instruction and the learning of resilient and nonresilient ELLs.

The findings from the study revealed that the treatment teachers' classroom instruction exceeded that of the comparison teachers on some important aspects, such as providing explanations, encouraging extended student responses, encouraging student success, and focusing on the task's learning processes. Students in the treatment classes reported a more positive classroom learning environment than students in the comparison classes (e.g., higher cohesion, satisfaction, and teacher support, as well as less friction), and they had significantly higher reading achievement gains than students in the comparison classrooms. The only discouraging results of the PIRP related to issues that impacted teachers' implementation of the PIRP program, such as the school district's emphasis on high-stakes testing.

Another quasi-experimental study by McClendon, Nettles, and Wigfield (2000) examined the effects of Promoting Achievement in School Through Sport (PASS), an elective, yearlong course in high school, implemented with 900 students from 16 high schools in the West and Midwest. PASS classrooms feature protective or resiliency characteristics such as caring and support, high expectations, and encouragement of student engagement and involvement. The curriculum is self-paced, mastery-based, and project-oriented. Students in PASS were found to have significantly higher grades than the comparison group at the end of the school year. Classroom observations revealed that PASS had more indicators of authentic instruction (i.e., instructional practices that connect students to meaningful, real-life experiences) than non-PASS classrooms.

Implications for Practice

Most of the current research on educational resiliency has focused predominantly on minority students from low-income families. The findings have typically revealed that there are several factors, including learning environment, classroom instruction, and motivational aspects, that differ significantly between resilient and nonresilient students. The results from these studies generally indicate that resilient students perceive a more positive learning environment and are more satisfied with their classrooms. In addition, nonresilient students often indicate that they have more difficulty in their classwork than resilient students. The magnitude of these differences is both statistically and educationally significant. These findings present a major challenge for classroom teachers who need to provide optimal learning environments for all of their students.

Theoretical and conceptual work in the area of resiliency has hypothesized that there are factors that can be altered to facilitate resiliency among at-risk students. Rutter (1987), for example, suggested four ways to facilitate resiliency: reduce risk impacts and change students' exposure to risks, reduce negative chain reactions that often follow exposure to risks, improve students' self-efficacy or self-esteem, and open up or create new opportunities for students. Masten (1994) similarly described four strategies for fostering resiliency, including reducing vulnerability and risk, reducing stressors, increasing available resources, and mobilizing protective processes. Finally, Swanson and Spencer (1991) also provided specific suggestions for enhancing most of these resiliency processes. They maintained that to reduce the risk impact, educators should increase access to academically challenging programs for disadvantaged students; forge alliances between schools, churches, organizations, and businesses; and increase funding for early childhood programs. To reduce negative chain reactions, Swanson and Spencer argued that teacher training, teacher recruitment, and teacher retention all need to address how exposure to risk can impact students, and they suggested that parent involvement in schools needs to be increased. To improve students' self-efficacy, they argued that schools should recognize and encourage academic performance and also redesign classrooms into heterogeneous ability groups, rather than tracking students by ability level. Finally, they maintained that there should be increased funding for compensatory education, student financial aid, pilot programs, and updated technological equipment. They also called for integrating resources from schools, businesses, and communities to help students make a smooth transition from the school to work environment.

There are several positive action strategies that classroom teachers can use to foster resiliency in students. Bruce (1995), for example, cited several specific strategies that teachers could use to foster resiliency, such as providing social skills training and teaching students self-monitoring, self-evaluation, and self-reinforcing strategies. School districts like the Minneapolis Public School system have developed policies for promoting resiliency and have trained most of their teachers in resilience strategies. They focus on five resilience strategies that schools and teachers are urged to implement. These include the following:

1. offer opportunities to develop attachment relationships,
2. increase students' sense of mastery in their lives,
3. build social competencies as well as academic skills,
4. reduce the stressors children do not need to face,
5. generate school and community resources to support the needs of children (North Central Regional Educational Laboratory, 1994).

More proactive approaches like those discussed below are needed to foster resiliency in students and reduce the achievement gap between resilient and nonresilient students.

Teacher support and expectations of students

Schools build resiliency in students through creating an environment of caring and personal relationships. The foundation of this relationship begins with educators who have a resiliency-building attitude (Henderson & Milstein, 1996). Teachers who model the resilient behaviors they desire from their students are often called "turnaround teachers" (Benard, 1997). Turnaround teachers provide and model three protective factors that buffer risk and enable positive development by meeting students' basic needs for safety, love and belonging, respect, power, and accomplishment and learning (Benard, 1991). The three factors include caring relationships, high expectations, and opportunities to participate and contribute.

Teachers can convey genuine support to students by listening to them and validating their feelings, and by demonstrating kindness, compassion, and respect (Higgins, 1994; Meier, 1995). Benard (1997) explained that turnaround teachers refrain from judging, do not take students' behavior personally, and understand that students are doing the best they can. Turnaround teachers can also have an impact on overwhelmed families. Teachers can proactively seek referrals to social service agencies, offer assistance through provision of supplies, and seek out family members' concerns regarding basic needs.

Teachers' high expectations can structure and guide student behavior and challenge students beyond what they believe they can do (Delpit, 1996). Turnaround teachers focus on the strengths of all students, and assist those students who have been labeled by schools or oppressed by their families or communities. They encourage overwhelmed youth to use their personal power to transform themselves from victims to survivors. Turnaround teachers help students learn not to internalize the adversity in their lives, to see adversity as impermanent, and to see setbacks not as pervasive but as surmountable or temporary (Seligman, 1995). Furthermore, Seligman contends that turnaround teachers are student-centered, using students' strengths, interests, goals, and dreams as the beginning point for learning, thereby tapping students' intrinsic motivation for learning.

Resiliency is fostered when teachers provide meaningful opportunities for students to contribute their skills and energies (Henderson & Milstein, 1996). Turnaround teachers provide opportunities to participate and contribute by allowing students to express their opinions, make choices, problem-solve, work with and help others, and "give back" to their community. They treat students as responsible individuals, allowing them to participate in all aspects of the school's functioning (Kohn, 1993). A key finding from the resilience research is that successful development and transformative power exist not necessarily in programmatic approaches but rather in deeper level relationships, beliefs, expectations, and a willingness to share power. Schools need to develop caring relationships not only between educators and students but also between students, between educators, and between educators and parents (Benard, 1997).

Promoting school resilience

The school environment is a critical arena for promoting the development of protective factors associated with individual resilience. It can contribute to both risk and protective mechanisms. The role of schools, however, has received relatively little consideration in the study of the resilience process (Maughan, 1988). School resilience is defined as teachers' involvement in their jobs; peer cohesion (e.g., how supportive teachers are of each other); and supervisor support, or the extent to which the admin-

istration is supportive of teachers and encourages them to be supportive of each other. In other words, schools build resiliency through creating an environment of caring personal relationships (Henderson & Milstein, 1996). Krovetz (1999) similarly argues that to build resilient schools, teachers must make time to develop professional relationships with other school members.

Administrators can create a school environment that supports teachers' resilience as well. Administrators can facilitate this nurturing environment in various ways. They can demonstrate positive beliefs, set expectations and trust teachers, and provide ongoing opportunities for teachers to reflect, dialogue, and make decisions together (McLaughlin & Talbert, 1993). Promoting teacher and school resilience will facilitate the development of students' resiliency. Resilient students are the outcome or product of a resilient school climate. All stakeholders can facilitate resiliency in students by modeling the desired behavior or outcome themselves. They can promote caring relationships among colleagues, demonstrate positive beliefs, provide ongoing opportunities to reflect, and make decisions together (McLaughlin & Talbert, 1993).

Professional development of teachers

Another effective approach for promoting resiliency is the use of feedback from classroom observation and learning environment measures to help teachers understand their current instructional strengths and weaknesses (Fraser, 1991; Stallings & Mohlman, 1988; Waxman, 1995; Waxman, Huang, & Padrón, 1995). One of the most influential components of the Pedagogy to Improve Resiliency Program (PIRP), for example, was the provision of feedback profiles to the teachers that described differences between resilient and nonresilient students' perceptions of their learning environment and observed behaviors in the classroom (Padrón et al., 2002). These profiles contained teachers' individual data from their classrooms and a summary of the aggregated data across the elementary school. The class means for each of the indicators on both of the observation and survey instruments were presented for both resilient and nonresilient students, along with the overall school mean value. This allowed each teacher to compare their class means to the school's average. Feedback from these profiles was used to stimulate dialogue and discussion about instructional strengths and weaknesses in the school. The profiles also helped initiate discussion about specific instructional areas that needed to be improved in the school.

The feedback profiles provided some guidelines for practice; they were not attempts to tell teachers what to do. These profiles provided teachers with concepts and criteria that they could use to reflect on their own teaching (Nuthall & Alton-Lee, 1990). Observational and survey feedback were used as guides for teachers, to give them the opportunity to reflect on their practices on their own and to decide what action to take. Quality teacher professional development is one of the keys to successful school reform and improving the education of at-risk students, and feedback from classroom observation and survey data can be a catalyst for this process.

Changing classroom instruction

Unfortunately, many children live in socially and economically disadvantaged environments that would induce despair in most individuals. Some of these children at risk, however, have learned how to selectively ignore their external conditions and "redirect their attention to an inner life that is real only to themselves" (Csikszentmihalyi, 1997). Csikszentmihalyi referred to such children as "autotelics," arguing that they concentrate more, enjoy themselves more, have higher self-esteem, and see what they do as related to future goals. This autotelic personality is similar to the concept of resiliency and, according to Csikszentmihalyi, the key component for encouraging the development of such a personality is the ability to concentrate and control attention.

As previously described, prior research comparing resilient and nonresilient students has found that nonresilient students are engaged in their schoolwork significantly less than resilient students. The implications of these findings suggest that nonresilient students need help in becoming more engaged and in controlling their attention better. Two components that help students control attention are learning to manage or focus one's goals, and providing immediate feedback on activities. Csikszentmihalyi (1997) refers to optimal experiences or "flow" as lessons or instructional activities that allow students to overcome challenging material by providing them with appropriate skills, relevant feedback, and clear goals. According to this perspective, classroom activities would ideally focus on flow experiences where students are involved in challenging lessons that would help them develop new skills and learn to focus their attention.

Classroom instruction for students at risk of academic failure, however, is typically the direct instructional model, where teachers teach to the whole class at the same time and control all of the classroom discussion and decision making (Waxman, Padrón, & Arnold, 2001). This teacher-directed instructional model emphasizes lecture, drill-and-practice, remediation, and student seatwork that consists mainly of worksheets (Stephen, Varble, & Taitt, 1993). Haberman (1991) argued that this overreliance on direct instruction in schools serving minority students constitutes a "pedagogy of poverty" (p. 290). He maintained that this teacher-directed instructional style leads to student complacency, passive resentment, and teacher burn out. Furthermore, he criticized this orientation because teachers are generally held accountable for "making" students learn, while students usually assume a passive role with low engagement in tasks or activities that are generally not authentic. In other words, classroom instruction that focuses on providing meaningful, flow-like experience for at-risk students is lacking.

Improving classroom instruction for nonresilient students centers on employing explicit teaching practices that have been found to be effective for at-risk students. Waxman, Padrón and Arnold (2001), for example, described five explicit practices that have been shown to improve the education of at-risk students:

1. cognitively-guided instruction,
2. culturally responsive teaching,
3. technology-enriched instruction,
4. cooperative learning, and
5. instructional conversations.

These research-based, instructional practices all stress a student-centered model of classroom instruction that emphasizes more active student learning, with teachers acting as facilitators of learning. Furthermore, these teaching practices may create "flow-type" instructional activities that are needed by many students at risk of failure. For more information on these practices, see Padrón, Waxman, and Rivera, 2002.

Implications for Research

In the past decade, studies that have identified differences between resilient and nonresilient students have employed both primary and secondary quantitative data analyses, as well as extensive qualitative, ethnographic field methods. There have only been a few naturalistic, longitudinal studies conducted that have examined the success of high-risk children (Pianta, Steinberg, & Rollins, 1995). Similarly, there have only been a small number of experimental studies that have investigated the impact of resiliency treatments on teacher and student outcomes.

Mixed methods approaches are needed to examine educational resiliency. Teacher self-report data, along with teacher, administrator, and student interview data could all

be used to help supplement the survey data and systematic classroom observation data that are generally used in resiliency research. Such data could help us understand, from different perspectives, the complexity of issues surrounding the educational improvement of students at risk of failure. More ethnographic studies are also needed to help uncover "grounded theoretical" explanations of factors that impact resilient and nonresilient students.

Future studies should investigate other indicators of resiliency to see what processes can promote protective mechanisms in the classroom learning context. Nelson-LeGall and Jones (1991), for example, argued that classroom help-seeking behavior is a strategy that allows learners to cope with academic difficulties; this becomes a protective mechanism in the classroom learning context. Clark (1991) similarly suggested that social identity and support networks are resilient behaviors that need to be fostered and developed by at-risk students, while Barbarin (1993) maintained that we need to focus on the coping processes students use to mediate risk factors. These variables and others, like peer-group support, problem-solving skills, and students' cognitive learning strategies need to be explored in future studies. Further studies should focus specifically on what aspects of the classroom or instructional learning environment can be adapted to serve as protective mechanisms for at-risk students. Future research needs to include experimental studies that explicitly test interventions that promote resiliency in at-risk students. In addition, more affective or motivational training programs need to be developed and implemented to test their impact on students' cognitive and affective outcomes. These and similar issues should be examined so we can continue to understand why some at-risk students are resilient. Such research will also provide a better understanding of what needs to be done to promote success and resiliency among nonresilient students.

Summary

While student success and failure are dependent upon a number of influential determinants, it is apparent that instructional practices and the classroom learning environment are contributing factors (Travis, 1995; Waxman, 1992; Waxman & Huang, 1997). The findings from many of the research studies discussed in this report are discouraging, because they paint a bleak picture of nonresilient students who are not doing well in school. Many of the nonresilient students in these studies appeared to have already "given up" on school, and many have indicated that they do not plan to finish high school. Furthermore, given that teachers in several studies felt that they could easily distinguish the resilient students from the nonresilient ones in their classrooms, it is troubling that few remediation or corrective activities were employed to aid nonresilient students. Although teachers were aware that nonresilient students were not doing well in their classrooms, there was no concerted effort to help them or to address their specific learning needs.

It has been argued that resilient individuals seek environments that are supportive and conducive to growth (Masten, 1994). Students in disadvantaged school environments, however, often cannot choose which schools or classes they attend. Educators need to be aware of the issues facing these students as well as how schools contribute to these problems. In conclusion, it is apparent that some of the risks associated with students' failure in school are due to their particular school environment. This is an unacceptable situation, and the solution will require collaboration among teachers, administrators, university faculty, parents, and the government (Futrell, 1988). In addition to this call to action, a change in attitude is necessary that reflects an awareness of the severity of the problems faced by students at risk and a serious commitment to reversing the cycle of educational failure.

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